

IN THE CLAIMS:

Claim 26 was previously cancelled. None of the claims have been amended herein. All of the pending claims are presented below. This listing of claims will replace all prior versions and listings of claims in the application. Please enter these claims as previously amended.

1. (Previously Presented) A chemical mechanical polishing (CMP) apparatus comprising:

a substantially continuous polishing pad having a polishing surface and an opposing surface; and a deformable pad comprising a plurality of laterally isolated, deformable solid supports attached to the opposing surface of the polishing pad, at least one of the size of the solid supports, the shape of the solid supports, the density of the solid supports, the elasticity of the solid supports, the material composition of the solid supports, and the distribution of the solid supports on the opposing surface of the polishing pad varying in at least one direction parallel to the polishing surface of the polishing pad, the plurality of solid supports substantially devoid of entrapped cells of gas or liquid.

2. (Original) The CMP apparatus of claim 1, further comprising a substrate carrier, a polishing table, a first mechanical drive assembly for placing the polishing table in motion, and a second mechanical drive assembly for placing the substrate carrier in motion.

3. (Previously Presented) The CMP apparatus of claim 1, wherein the deformable pad further comprises a ventral layer attached to a bottom surface of each of the plurality of solid supports.

4. (Previously Presented) The CMP apparatus of claim 3, further comprising a dorsal layer attached to a top surface of each of the plurality of solid supports.

5. (Previously Presented) The CMP apparatus of claim 1, wherein the deformable pad further comprises a dorsal layer attached to a top surface of each of the plurality of solid supports.

6. (Original) The CMP apparatus of claim 1, further comprising at least one of a ventral layer and a dorsal layer integrally formed with the plurality of solid supports.

7. (Original) The CMP apparatus of claim 1, wherein the plurality of solid supports comprises a first plurality of solid supports having a first shape and a second plurality of solid supports having a second shape.

8. (Original) The CMP apparatus of claim 1, wherein the plurality of solid supports comprises a first plurality of solid supports having a first size and a second plurality of solid supports having a second size.

9. (Original) The CMP apparatus of claim 1, wherein the plurality of solid supports comprises one or more elastically deformable materials.

10. (Original) The CMP apparatus of claim 9, wherein at least one solid support of the plurality of solid supports comprises one or more materials of varying density.

11. (Original) The CMP apparatus of claim 9, wherein at least one solid support of the plurality of solid supports comprises a plurality of materials, each material of the plurality of materials having a different elasticity.

12. (Original) The CMP apparatus of claim 1, wherein at least one solid support of the plurality of solid supports has a cross-section that varies in size in a direction normal to the polishing pad.

13. (Original) The CMP apparatus of claim 1, wherein the plurality of solid supports are laterally spaced from each other at varying distances.

14. (Previously Presented) A method for chemical mechanical polishing (CMP) comprising:

providing a CMP apparatus selected from a group consisting of a linear polishing apparatus and a polishing apparatus having a rotatable polishing table;

providing a deformable pad comprising a plurality of laterally isolated, deformable solid supports, at least one of the size of the solid supports, the shape of the solid supports, the density of the solid supports, the elasticity of the solid supports, the material composition of the solid supports, and the distribution of the solid supports on the opposing surface of the polishing pad varying across the deformable pad in at least one direction, the plurality of solid supports substantially devoid of entrapped cells of gas or liquid;

attaching a surface of a substantially continuous polishing pad to the plurality of solid supports of the deformable pad;

providing a semiconductor substrate having a surface to be polished; and contacting the surface to be polished with a polishing surface of the polishing pad opposite the surface to which the solid supports of the deformable pad are attached.

15. (Previously Presented) The method of claim 14, wherein providing the deformable pad comprising a plurality of solid supports comprises providing a deformable pad comprising a plurality of solid supports attached to a ventral layer.

16. (Previously Presented) The method of claim 15, wherein providing the deformable pad comprising a plurality of solid supports attached to the ventral layer comprises providing a deformable pad including a plurality of solid supports attached to ventral and dorsal layers.

17. (Previously Presented) The method of claim 14, wherein providing the deformable pad comprising a plurality of solid supports comprises providing a deformable pad comprising a plurality of solid supports attached to a dorsal layer.

18. (Original) The method of claim 14, further comprising:
integrally forming the plurality of solid supports with at least one of a ventral layer and a dorsal layer.

19. (Original) The method of claim 14, further comprising:
forming the plurality of solid supports with a first plurality of solid supports having a first shape
and a second plurality of solid supports having a second shape.

20. (Original) The method of claim 14, further comprising:
forming the plurality of solid supports with a first plurality of solid supports having a first size
and a second plurality of solid supports having a second size.

21. (Original) The method of claim 14, further comprising:
forming the plurality of solid supports with one or more elastically deformable materials.

22. (Original) The method of claim 21, further comprising:
forming at least one solid support of the plurality of solid supports with one or more materials of
varying density.

23. (Original) The method of claim 21, further comprising:
forming at least one solid support of the plurality of solid supports with a plurality of materials,
each material of the plurality of materials having a different elasticity.

24. (Original) The method of claim 14, further comprising:
forming at least one solid support of the plurality of solid supports with a cross-section that
varies in size in a direction normal to the polishing pad.

25. (Original) The method of claim 14, further comprising:
laterally spacing the plurality of solid supports from each other at varying distances.

26. (Cancelled)

27. (Previously Presented) A chemical mechanical polishing (CMP) apparatus
comprising:
a polishing pad having a polishing surface; and
a deformable pad attached to the polishing pad, the deformable pad comprising a plurality of
laterally isolated solid supports, the plurality of solid supports substantially devoid of
entrapped cells of gas or liquid and comprises a first plurality of solid supports having a
first shape and a second plurality of solid supports having a second shape.

28. (Previously Presented) A chemical mechanical polishing (CMP) apparatus
comprising:
a polishing pad having a polishing surface; and
a deformable pad attached to the polishing pad, the deformable pad comprising a plurality of
laterally isolated solid supports, the plurality of solid supports devoid of entrapped cells
of gas or liquid and comprises a first plurality of solid supports having a first size and a
second plurality of solid supports having a second size.

29. (Previously Presented) A chemical mechanical polishing (CMP) apparatus comprising:
a polishing pad having a polishing surface; and
a deformable pad attached to the polishing pad, the deformable pad comprising a plurality of laterally isolated solid supports, the plurality of solid supports substantially devoid of entrapped cells of gas or liquid, comprising one or more elastically deformable materials, and at least one solid support of the plurality of solid supports comprising one or more materials of varying density.

30. (Previously Presented) A chemical mechanical polishing (CMP) apparatus comprising:
a polishing pad having a polishing surface; and
a deformable pad attached to the polishing pad, the deformable pad comprising a plurality of laterally isolated solid supports, the plurality of solid supports substantially devoid of entrapped cells of gas or liquid, comprising one or more elastically deformable materials, and at least one solid support of the plurality of solid supports comprising a plurality of materials, each material of the plurality of materials having a different elasticity.

31. (Previously Presented) A chemical mechanical polishing (CMP) apparatus comprising:
a polishing pad having a polishing surface;
a deformable pad attached to the polishing pad, the deformable pad comprising a plurality of laterally isolated solid supports, the plurality of solid supports substantially devoid of entrapped cells of gas or liquid and at least one solid support of the plurality of solid supports has a cross-section that varies in size in a direction normal to the polishing pad.

32. (Previously Presented) A chemical mechanical polishing (CMP) apparatus comprising:
a polishing pad having a polishing surface;
a deformable pad attached to the polishing pad, the deformable pad comprising a plurality of laterally isolated solid supports, the plurality of solid supports substantially devoid of entrapped cells of gas or liquid and the plurality of solid supports are laterally spaced from each other at varying distances.

33. (Previously Presented) The CMP apparatus of claim 1, wherein at least one of the size of the solid supports, the shape of the solid supports, the density of the solid supports, the elasticity of the solid supports, the material composition of the solid supports, and the distribution of the solid supports on the opposing surface of the polishing pad varies in a radial direction between a central region of the deformable pad and a peripheral region of the deformable pad.